



STIC Search Report

EIC 1700

10/615,460

REVIEWED 2/14/2006

STIC Database Tracking Number: 179303

TO: Robert Sellers
Location: REM 10A55
Art Unit : 1712
February 13, 2006

Case Serial Number: 10/615460

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes

The registry numbers for Chromophores Z^2 , Z^3 , AND Z^5 , were not found. Structures similar to Z^2 are included, but probably are valid only if a methyl migration from one of the NITROGENS in the connecting chain to the CARBON in the chain connecting the 2 phenyl rings are possible as an isomerization that naturally occurs.

Registry numbers and structures related to chromophores Z^3 and Z^5 are included in the hopes they may be useful to you, but exact matches were not found.

Some compositions of CHROMOPHORE Z^3 with DIEPOXY X^1 were stumbled upon, so also included. Hope they are useful, but they may not be.

p. 14 107277-62-3

100697-05-0

100697-03-8

99061-14-0

p. 15 38782-73-9

38782-71-7

p. 16 37570-70-0

p. 18 154487-10-2 Z_1

p. 28 154487-32-8 \uparrow + OGEBA

pp. 20-21 1995:897461

2/28



Access DB# 179303**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: ROBERT SELLERS Examiner #: 61475 Date: 2/9/2006
Art Unit: 1712 Phone Number 800-571-272-1093 Serial Number: 10/615,460
Mail Box and Bldg/Room/Location: 10A55 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: ELECTRO-OPTIC POLYMERS WITH TURNABLE REFRACTIVE INDEX
FOR OPTICAL WAVEGUIDES

Inventors (please provide full names):

GEOFFREY ANDREW LINDSAY, PETER ZARRAS, JOHN D. STENGER-SMITHEarliest Priority Filing Date: 8/25/2000 CIP 09/662,383

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please obtain CAS registry numbers for the attached compounds.

NONE

STAFF USE ONLY

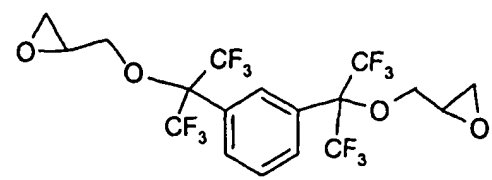
	Type of Search	Vendors and cost where applicable
Searcher: <u>244</u>	NA Sequence (#) _____	STN <u>\$1488.41</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>3</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>2/13/06</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>300</u>	Other _____	Other (specify) _____

615,460

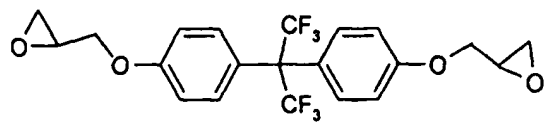
L28-L30

~~L27-L28~~

Patent Application
Navy Case No. 84887



diepoxy Y1



diepoxy Y2

L33

L36

4

5

C₁₈H₁₄F₁₂O₄
24146-93-0
24146-94-1

C₂₁H₁₄F₆O₄
2994-7863-0
~~2424629424~~

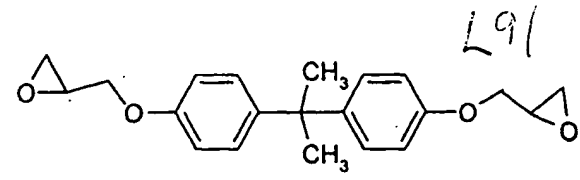
1

6. The polymer according to claim 1, wherein said second diepoxy monomer comprising

2

at one least of:

1675-54-3

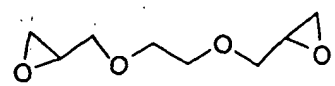


diepoxy X1

L91

2224-15-9

C₂₁H₂₈O₄



diepoxy X2

2221-15-9

C₈H₁₄O₄

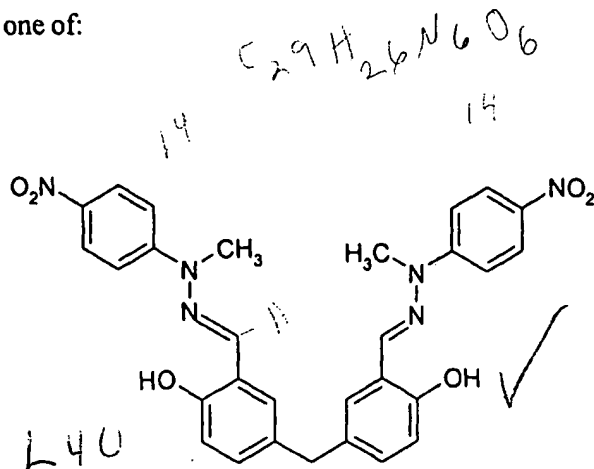
20 L20-L23

2224-15-9
18167-12-5
180138-39-0
180138-38-9

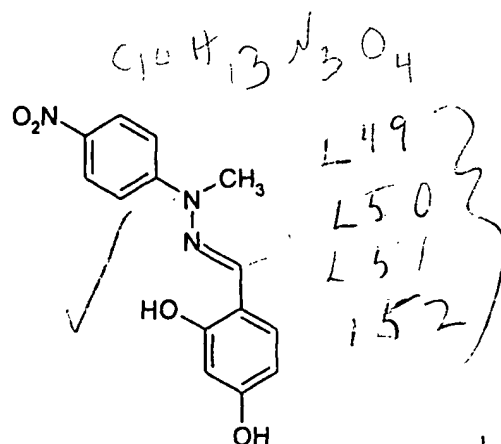
181657-12-5
180138-39-0
180138-38-9

12
24

- 1 7. The polymer according to Claim 1, wherein said bisphenol monomer comprising at least
2 one of:

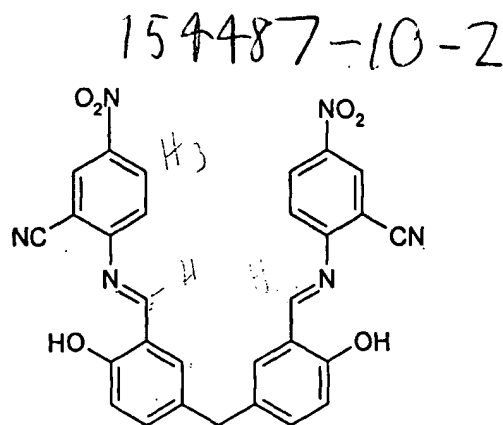


chromophore Z¹



chromophore Z²

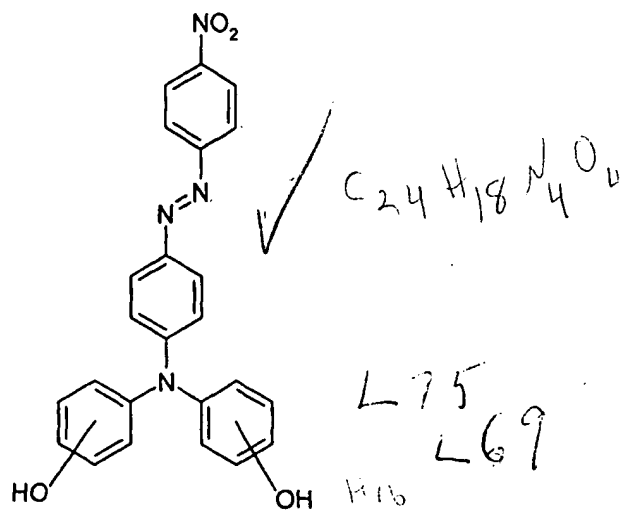
Not found



chromophore Z³

Not found

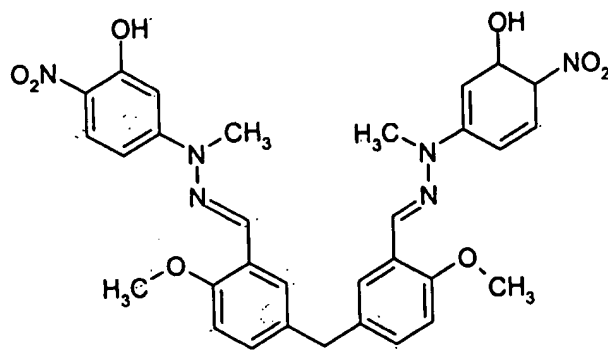
$C_{29}H_{18}N_6O_6$
18



chromophore Z⁴

L69
(L76)

30



chromophore Z⁵

5

6

7

C₃₁H₂₄N₆O₈

30

Not found

=> d his

(FILE 'HOME' ENTERED AT 10:48:33 ON 13 FEB 2006)

FILE 'HCAPLUS' ENTERED AT 10:49:36 ON 13 FEB 2006

L1 E LINDSAY G?/AU
 196 S LINDSAY G?/AU
 E ZARRAS P?/AU
L2 72 S ZARRAS P?/AU
 E STENGER-SMITH J?/AU
 E STENGER-S J?/AU
 E STENGER S/AU
 E STENGER SMITH J?/AU/AU
L3 105 S STENGER SMITH J?/AU
L4 15 S L1 AND L2 AND L3
L5 72392 S REFRAC?(N) (INDEX? OR INDIC?)
L6 1 S L5 AND L4
 SEL RN

FILE 'REGISTRY' ENTERED AT 10:55:39 ON 13 FEB 2006

L7 63 S E1-E63

FILE 'HCAPLUS' ENTERED AT 10:58:00 ON 13 FEB 2006

L8 14 S L4 NOT L6
L9 1 S L8 AND ?EPOX?
 SEL RN

FILE 'REGISTRY' ENTERED AT 10:59:11 ON 13 FEB 2006

L10 9 S E64-E72

FILE 'HCAPLUS' ENTERED AT 11:00:27 ON 13 FEB 2006

FILE 'HCAPLUS' ENTERED AT 11:01:17 ON 13 FEB 2006
L11 0 S OXIRAN? AND L4
 SEL L4 RN

FILE 'REGISTRY' ENTERED AT 11:02:52 ON 13 FEB 2006

L12 116 S E73-E188
L13 44 S L12 NOT (L7 OR L10)
L14 2 S L13 AND ?OXIRAN?
L15 0 S L12 AND DIAZO?
L16 1 S L12 AND DIAZ?
 E C8H14O4/MF
L17 1801 S C8H14O4/MF
L18 283 S L17 AND 2/NR
L19 7 S L18 AND OXIRAN?
L20 1 S 2224-15-9/RN
L21 1 S 181657-12-5/RN
L22 1 S 180138-39-0/RN
L23 1 S 180138-38-9/RN
 E C18H14F12O4/MF
L24 4 S C18H14F12O4/MF
L25 3 S L24 AND 3/NR
L26 1 S L24 NOT L25
L27 1 S 32811-37-3/RN
L28 1 S 26146-94-1/RN
L29 1 S 109374-18-7/RN
L30 1 S 26146-93-0/RN
 E C21H18F6O4/MF
L31 13 S C21H18F6O4/MF
L32 2 S L31 AND 4/NR
L33 1 S 2994-63-0/RN
L34 6 S L31 AND 2/NR
L35 3 S L31 AND OXIRAN?
L36 1 S 745809-75-0/RN
 E C29H26N6O6/MF

L37 27 S C29H26N6O6/MF
L38 14 S L37 AND 4/NR
L39 2 S L38 AND HYDRAZONE
L40 1 S 154487-10-2/RN
E C14H15N3O4/MF
E C14H13N3O4/MF
L41 913 S C14H13N3O4/MF
L42 658 S L41 AND 2/NR
L43 439 S L42 AND NITRO
L44 5 S L43 AND DIHYDROXY

FILE 'LREGISTRY' ENTERED AT 12:32:23 ON 13 FEB 2006
L45 STR 139776-05-9

FILE 'REGISTRY' ENTERED AT 12:34:14 ON 13 FEB 2006
L46 0 S L45

FILE 'LREGISTRY' ENTERED AT 12:35:00 ON 13 FEB 2006
L47 STR L45

FILE 'REGISTRY' ENTERED AT 12:37:41 ON 13 FEB 2006
L48 0 S L47

FILE 'REGISTRY' ENTERED AT 12:38:11 ON 13 FEB 2006
E 399000-12-5/RN
L49 1 S 399000-12-5/RN
L50 1 S 389871-96-9/RN
E 328023-51-4/RN
L51 1 S 328023-51-4/RN
L52 1 S 139776-05-9/RN
E C29H18N6O6/MF
L53 5 S C29H18N6O6/MF

FILE 'LREGISTRY' ENTERED AT 13:03:44 ON 13 FEB 2006
L54 STR

FILE 'REGISTRY' ENTERED AT 13:11:15 ON 13 FEB 2006
L55 0 S L54
L56 0 S L54 FUL

FILE 'LREGISTRY' ENTERED AT 13:12:31 ON 13 FEB 2006
L57 STR L54

FILE 'REGISTRY' ENTERED AT 13:22:08 ON 13 FEB 2006
L58 0 S L57
L59 0 S L57 FUL

FILE 'LREGISTRY' ENTERED AT 13:23:16 ON 13 FEB 2006
L60 STR L57

FILE 'REGISTRY' ENTERED AT 13:23:35 ON 13 FEB 2006
L61 0 S L60
L62 0 S L60 FUL
E C24H18N4O4/MF
L63 337 S C24H18N4O4/MF
L64 152 S L63 AND 4/NR
L65 0 S L64 AND NO2
L66 88 S L64 AND NITRO
L67 0 S L66 AND DIAZO
L68 1 S L66 AND PHENOL
L69 1 S 210175-34-1/RN
L70 56 S L64 AND NITROPHENYL/CNS
L71 11 S L70 AND AZO/CNS

FILE 'LREGISTRY' ENTERED AT 13:37:09 ON 13 FEB 2006
L72 STR 210175-34-1

FILE 'REGISTRY' ENTERED AT 13:40:04 ON 13 FEB 2006
L73 1 S L72
L74 5 S L73 FUL
L75 1 S L74 AND 1/NC
SAV L74 SEL460/A
L76 1 S L75 AND L69
E C31H24N6O8/MF
E C31H30N6O8/MF
L77 13 S C31H30N6O8/MF

FILE 'LREGISTRY' ENTERED AT 13:54:30 ON 13 FEB 2006
L78 STR

FILE 'REGISTRY' ENTERED AT 13:57:07 ON 13 FEB 2006
L79 1 S L78
L80 49 S L79 FUL
SAV L80 SEL460A/A
L81 0 S L77 AND L80

FILE 'LREGISTRY' ENTERED AT 14:01:47 ON 13 FEB 2006
L82 STR L78

FILE 'REGISTRY' ENTERED AT 14:04:24 ON 13 FEB 2006
L83 0 S L82

FILE 'LREGISTRY' ENTERED AT 14:04:36 ON 13 FEB 2006
L84 STR L82

FILE 'REGISTRY' ENTERED AT 14:05:08 ON 13 FEB 2006
L85 1 S L84
L86 1 S L84 SSS SAM SUB=L80
L87 27 S L84 SSS FUL SUB=L80
SAV L87 SEL460B/A
L88 19 S L87 AND 1/NC
L89 8 S L87 NOT L88
L90 7241 S 1675-54-3/CRN
L91 1 S 1675-54-3/RN
L92 4 S L90 AND L80
L93 4 S L89 NOT L92

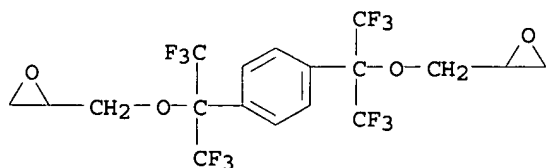
FILE 'HCAPLUS' ENTERED AT 15:15:10 ON 13 FEB 2006
L94 3 S L92
L95 20 S L80
L96 12837 S L90
L97 3 S L95 AND L96
L98 3 S L94 OR L97

FILE 'LREGISTRY' ENTERED AT 15:16:55 ON 13 FEB 2006

FILE 'REGISTRY' ENTERED AT 15:17:03 ON 13 FEB 2006

=> d 128 rn str

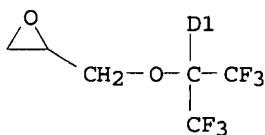
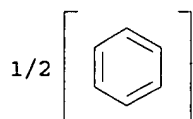
L28 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 26146-94-1 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

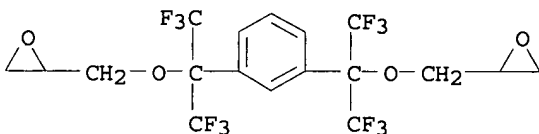
=> d 129 rn str

L29 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 109374-18-7 REGISTRY



=> d 130 rn str

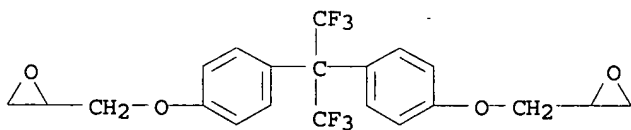
L30 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 26146-93-0 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d 133 rn str

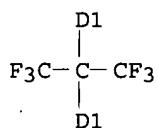
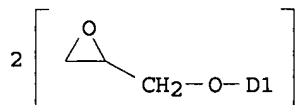
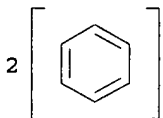
L33 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 2994-63-0 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

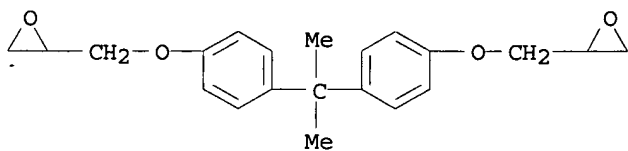
=> d 136 rn str

L36 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 745809-75-0 REGISTRY



=> d 191 rn str

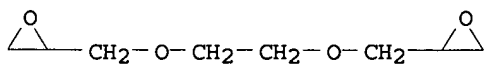
L91 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 1675-54-3 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d 120 rn str

L20 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 2224-15-9 REGISTRY

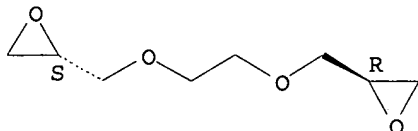


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d l21 rn str

L21 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 181657-12-5 REGISTRY

Relative stereochemistry.

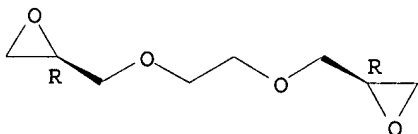


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d l22 rn str

L22 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 180138-39-0 REGISTRY

Absolute stereochemistry.

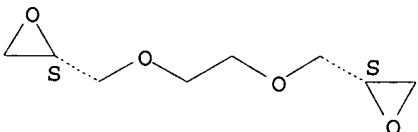


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d l23 rn str

L23 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 180138-38-9 REGISTRY

Absolute stereochemistry.

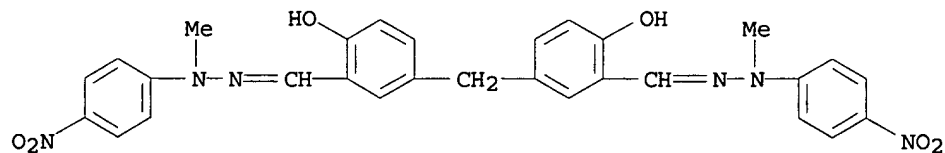


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d l40 rn str

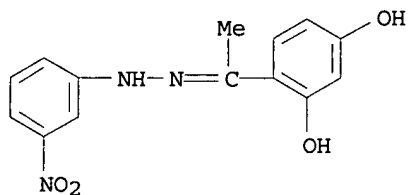
L40 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN

RN 154487-10-2 REGISTRY



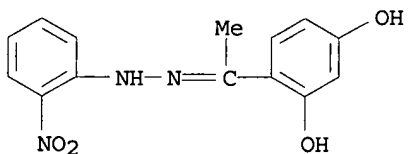
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d 149 rn str

L49 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 399000-12-5 REGISTRY

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

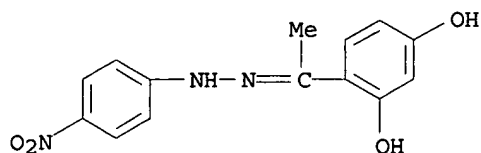
=> d 150 rn str

L50 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 389871-96-9 REGISTRY

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d 151 rn str

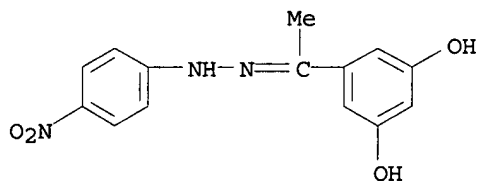
L51 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 328023-51-4 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d l52 rn str

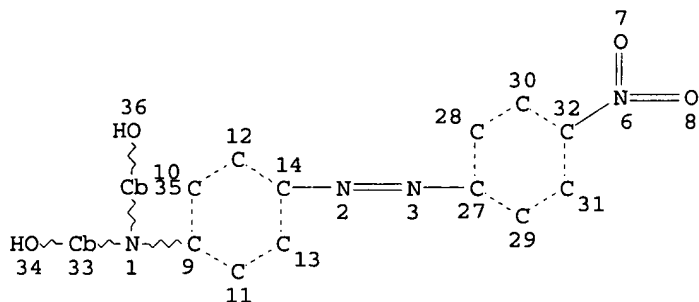
L52 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 139776-05-9 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d que 176

L69 1 SEA FILE=REGISTRY ABB=ON PLU=ON 210175-34-1/RN
L72 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 33
GGCAT IS UNS AT 35
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E6 C AT 33
ECOUNT IS E6 C AT 35

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 22

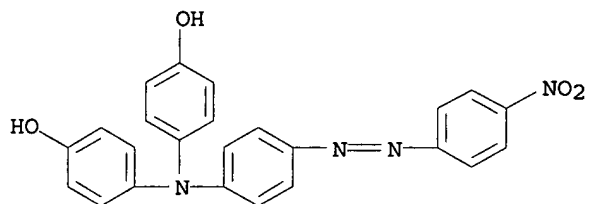
STEREO ATTRIBUTES: NONE

L74 5 SEA FILE=REGISTRY SSS FUL L72
L75 1 SEA FILE=REGISTRY ABB=ON PLU=ON L74 AND 1/NC

L76 1 SEA FILE=REGISTRY ABB=ON PLU=ON L75 AND L69

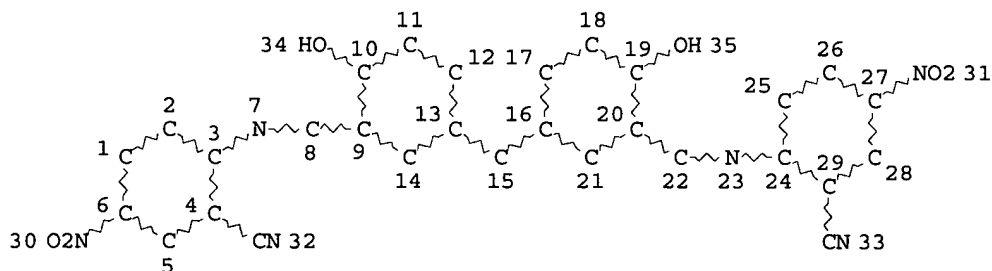
=> d l76 rn str

L76 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 210175-34-1 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> d que stat l56
L54 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

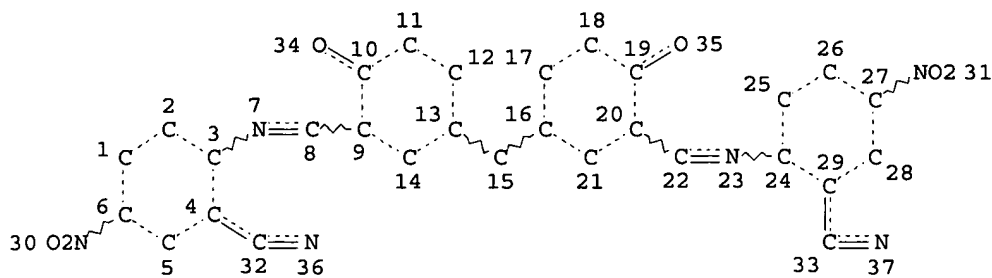
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
L56 0 SEA FILE=REGISTRY SSS FUL L54

100.0% PROCESSED 7 ITERATIONS
SEARCH TIME: 00.00.01

0 ANSWERS

=> d que stat l59
L57 STR



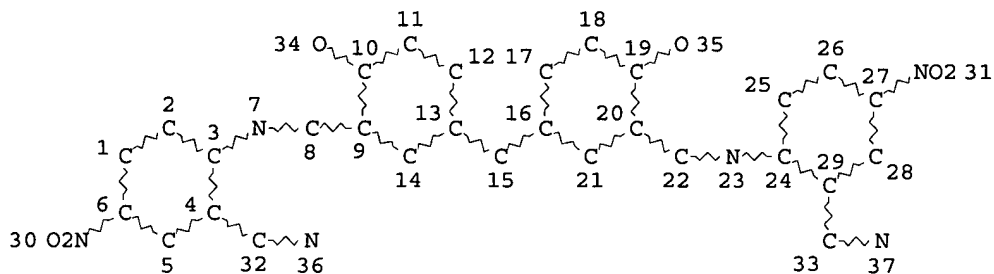
NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE
 L59 0 SEA FILE=REGISTRY SSS FUL L57

100.0% PROCESSED 4 ITERATIONS 0 ANSWERS
 SEARCH TIME: 00.00.01

=> d que stat 162
 L60 STR



NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

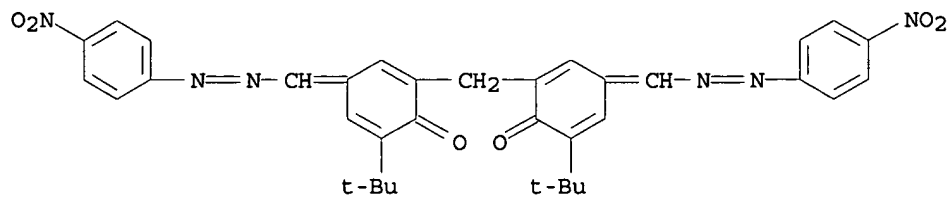
GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE
 L62 0 SEA FILE=REGISTRY SSS FUL L60

100.0% PROCESSED 4 ITERATIONS 0 ANSWERS
 SEARCH TIME: 00.00.01

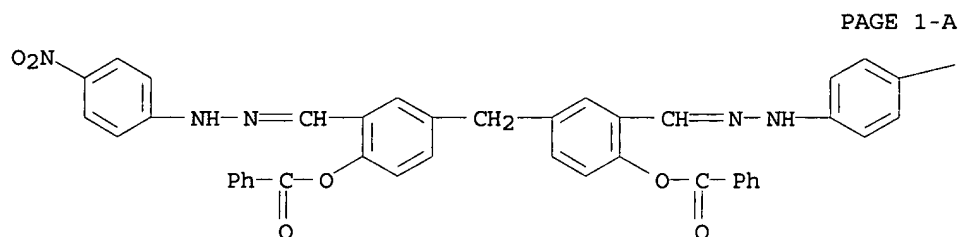
=> => d l88 1-19 rn str

L88 ANSWER 1 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 610314-98-2 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 2 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 342788-81-2 REGISTRY



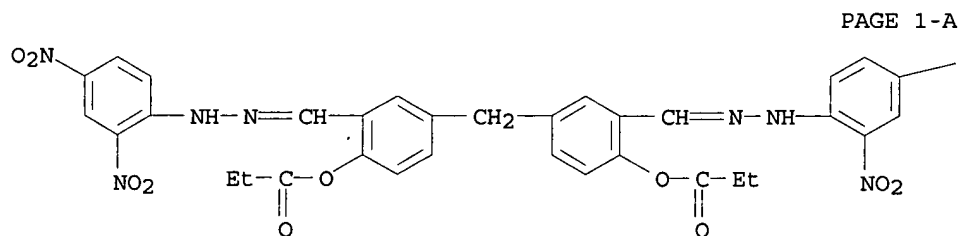
PAGE 1-A

—NO₂

PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 3 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 339251-16-0 REGISTRY



PAGE 1-A

—NO₂

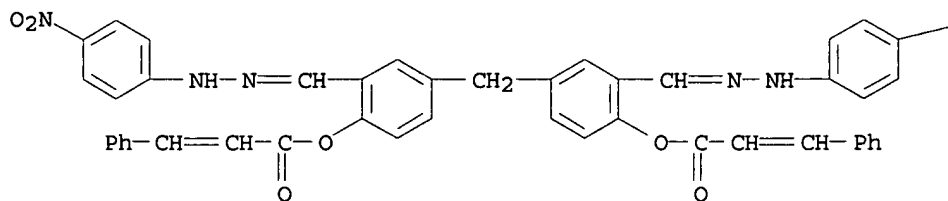
PAGE 1-B

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 4 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN

RN 339119-93-6 REGISTRY

PAGE 1-A



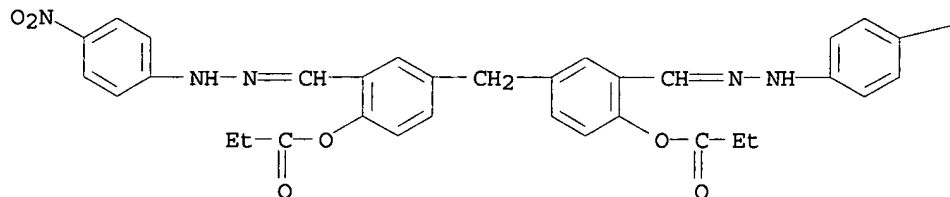
PAGE 1-B

—NO₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 5 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 310873-14-4 REGISTRY

PAGE 1-A

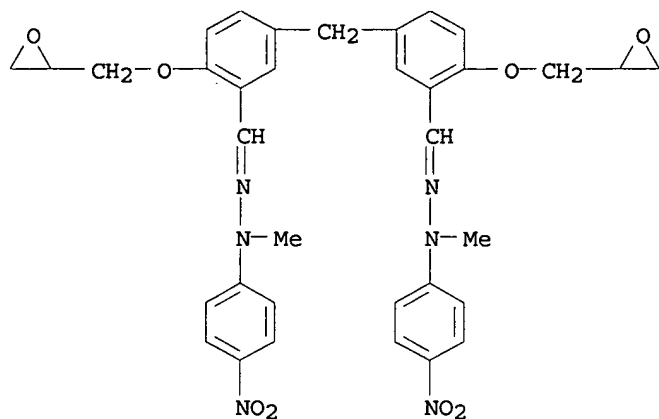


PAGE 1-B

—NO₂

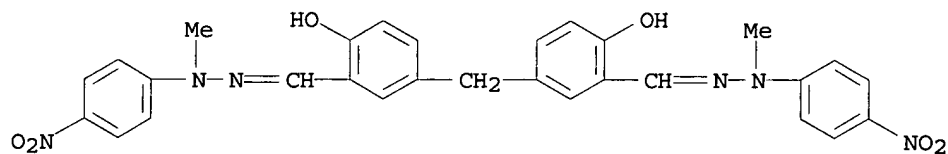
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 6 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 172729-76-9 REGISTRY



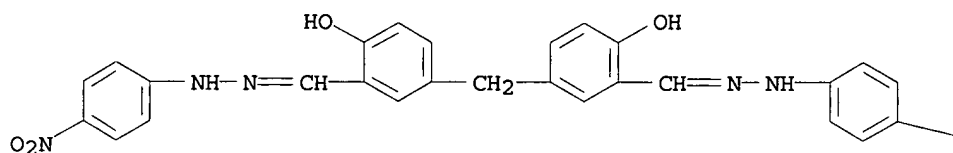
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 7 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 154487-10-2 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 8 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 154487-09-9 REGISTRY



PAGE 1-A

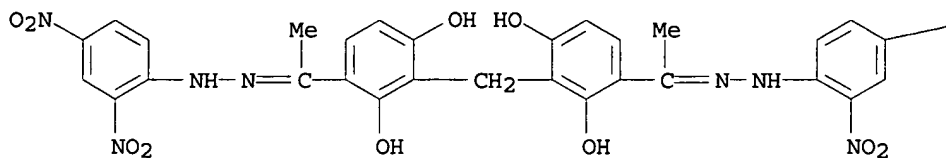
PAGE 1-B

—NO₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 9 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 107277-62-3 REGISTRY

PAGE 1-A

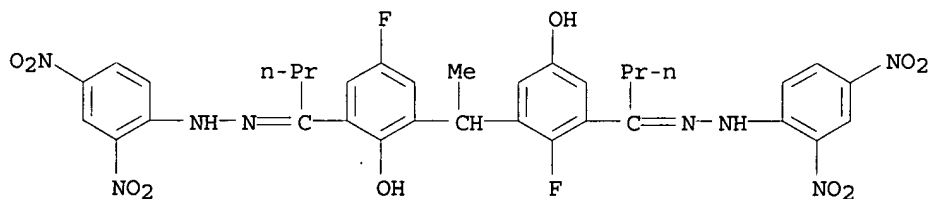


PAGE 1-B

—NO₂

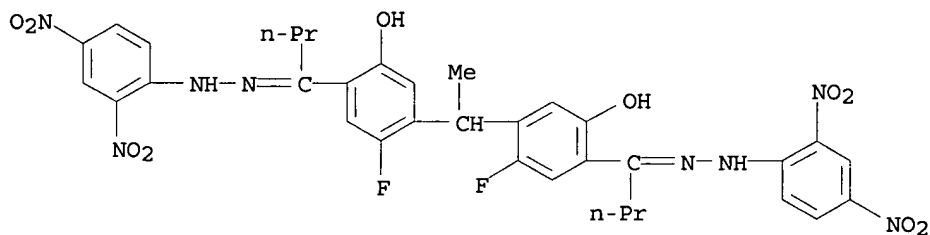
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 10 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 100697-05-0 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

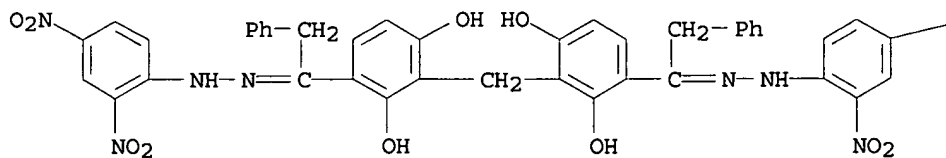
L88 ANSWER 11 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 100697-03-8 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 12 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 99061-14-0 REGISTRY

PAGE 1-A

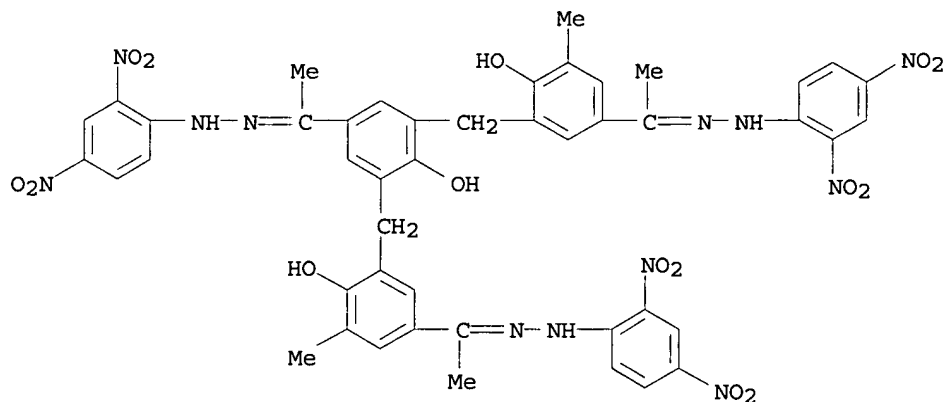


PAGE 1-B

—NO₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

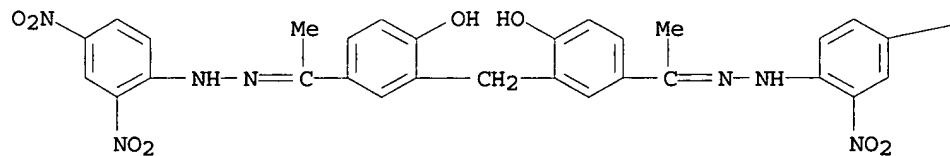
L88 ANSWER 13 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 38782-75-1 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 14 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 38782-73-9 REGISTRY

PAGE 1-A



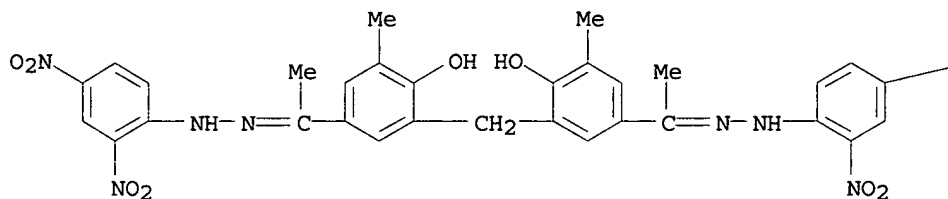
PAGE 1-B

 —NO_2

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 15 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 38782-71-7 REGISTRY

PAGE 1-A

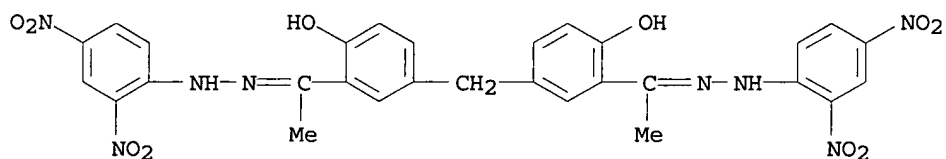


PAGE 1-B

 —NO_2

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

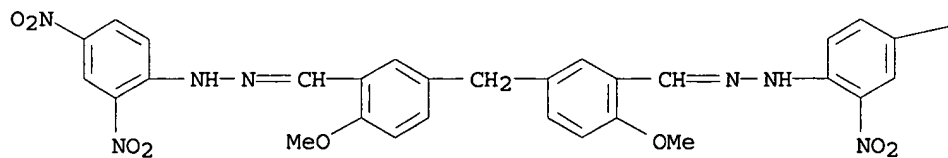
L88 ANSWER 16 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 37570-70-0 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 17 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
RN 37568-72-2 REGISTRY

PAGE 1-A



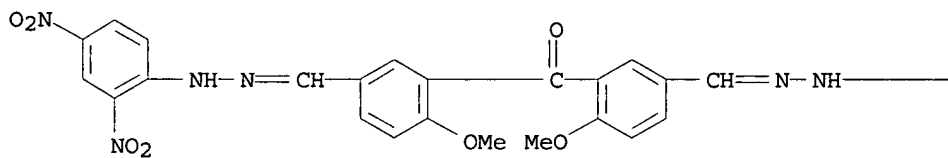
PAGE 1-B

—NO₂

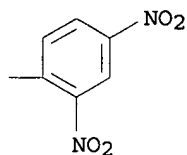
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 18 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 33507-73-2 REGISTRY

PAGE 1-A

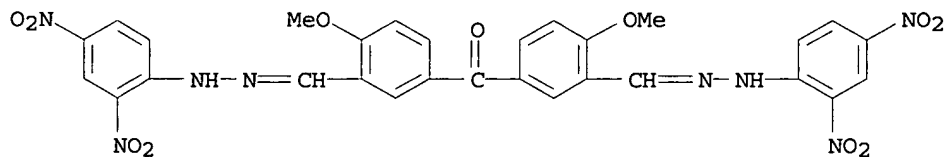


PAGE 1-B



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L88 ANSWER 19 OF 19 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 20795-67-9 REGISTRY



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

=> => d que stat 192

L78 STR

Cb~N~N~C~Cb~C~Cb~C~N~N~Cb
1 2 3 4 5 6 7 8 9 10 11

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 1

GGCAT IS UNS AT 5

GGCAT IS UNS AT 7

GGCAT IS UNS AT 11

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS E6 C AT 1

ECOUNT IS E6 C AT 5

ECOUNT IS E6 C AT 7

ECOUNT IS E6 C AT 11

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L80 49 SEA FILE=REGISTRY SSS FUL L78

L90 7241 SEA FILE=REGISTRY ABB=ON PLU=ON 1675-54-3/CRN

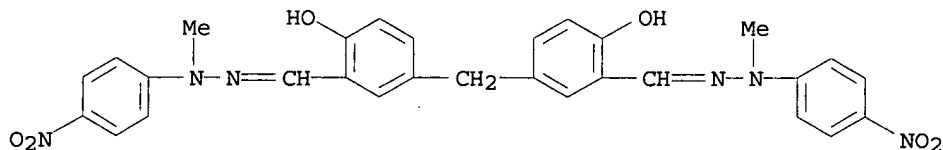
L92 4 SEA FILE=REGISTRY ABB=ON PLU=ON L90 AND L80

=> d 192 1,3,4 crn str

L92 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2006 ACS on STN

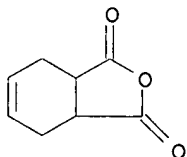
CM 1

CRN 154487-10-2



CM 2

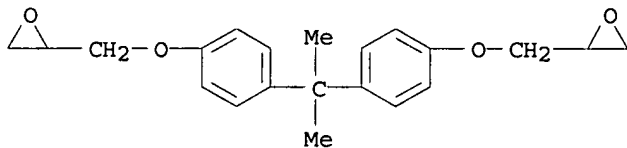
CRN 26590-20-5



D1-Me

CM 3

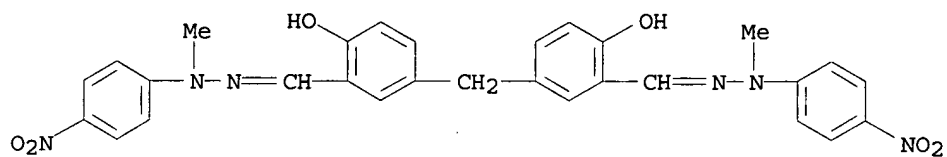
CRN 1675-54-3



L92 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2006 ACS on STN

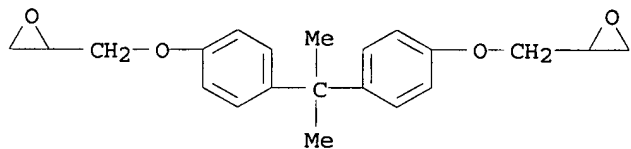
CM 1

CRN 154487-10-2



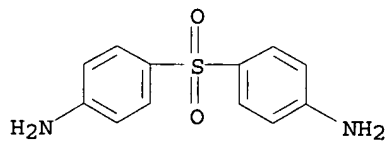
CM 2

CRN 1675-54-3



CM 3

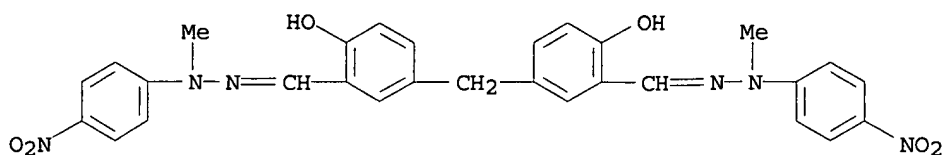
CRN 80-08-0



L92 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2006 ACS on STN

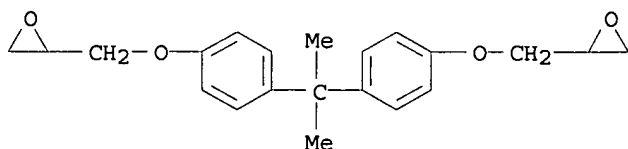
CM 1

CRN 154487-10-2



CM 2

CRN 1675-54-3



=> => d que stat 198

L78 STR

Cb~N~N~C~Cb~C~Cb~C~N~N~Cb
 1 2 3 4 5 6 7 8 9 10 11

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 1

GGCAT IS UNS AT 5

GGCAT IS UNS AT 7

GGCAT IS UNS AT 11

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS E6 C AT 1

ECOUNT IS E6 C AT 5

ECOUNT IS E6 C AT 7

ECOUNT IS E6 C AT 11

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L80 49 SEA FILE=REGISTRY SSS FUL L78

L90 7241 SEA FILE=REGISTRY ABB=ON PLU=ON 1675-54-3/CRN

L92 4 SEA FILE=REGISTRY ABB=ON PLU=ON L90 AND L80

L94 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L92

L95 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L80

L96 12837 SEA FILE=HCAPLUS ABB=ON PLU=ON L90

L97 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L95 AND L96

L98 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L94 OR L97

=> d 198 1-3 ibib abs hitstr hitind

L98 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:897461 HCAPLUS

DOCUMENT NUMBER: 123:314721

TITLE: New nonlinear optically active polymers containing hydrazone chromophores

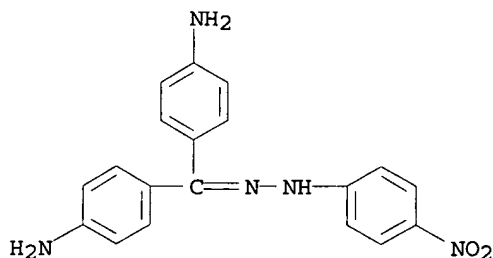
AUTHOR(S): Mang, M. N.; Bales, S. E.; Brennan, D. J.; Chartier, M. A.; Gulotty, R. J.; Haag, A. P.;

Inbasekaran, M. N.; Langhoff, C. A.; Newsham, M. D.
 CORPORATE SOURCE: Central Research and Development Laboratories,
 Dow Chemical Company, Midland, MI, 48674, USA
 SOURCE: Materials Research Society Symposium
 Proceedings (1995), 392 (Thin Films for
 Integrated Optics Applications), 53-64
 CODEN: MRSPDH; ISSN: 0272-9172
 PUBLISHER: Materials Research Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A family of new polymeric nonlinear optical materials with high
 second order nonlinearities, good thermooxidative and
 reorientational stability, and low waveguide losses have been
 prepared from a series of chromophores containing hydrazone moieties.
 These new polymerizable chromophores can be readily prepared by the
 acid-catalyzed condensation of substituted arylhydrazines with
 functionalized ketones or aldehydes to give mols. that have
 $\mu\beta$ values up to 2440 ± 10^{-48} esu (1579 nm) in solution
Thermoplastic polycarbonates and poly(hydroxy ethers) containing
hydrazone chromophores were prepared with Tg's ranging from
135° to 285°. Epoxy systems crosslinked with
amino-functional arylhydrazones, have high d33 values and high
glass transition temps., albeit with lower relative
thermo-oxidative stability. Simple Mach-Zehnder modulators and
registered multilevel structures based on these polymers were
reported previously. One device, prepared from a hydrazone-containing
poly(hydroxy ether), has an r33 value of 10 pm/V (1320 nm), and
retains most of that activity to 140°.
 IT 162430-88-8P 170172-11-9P 170172-13-1P
 170172-14-2P 170172-15-3P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)
 (nonlinear optical; nonlinear optically active polymers containing
 hydrazone chromophores)
 RN 162430-88-8 HCAPLUS
 CN Methanone, bis(4-aminophenyl)-, (4-nitrophenyl)hydrazone, polymer
 with 2,2'-[(1-methylethylidene)bis(4,1-
 phenyleneoxymethylene)]bis[oxirane] and 2,2',2''-
 [methyldynetrakis(4,1-phenyleneoxymethylene)]tris[oxirane](9CI)
 (CA INDEX NAME)

CM 1

CRN 162430-76-4

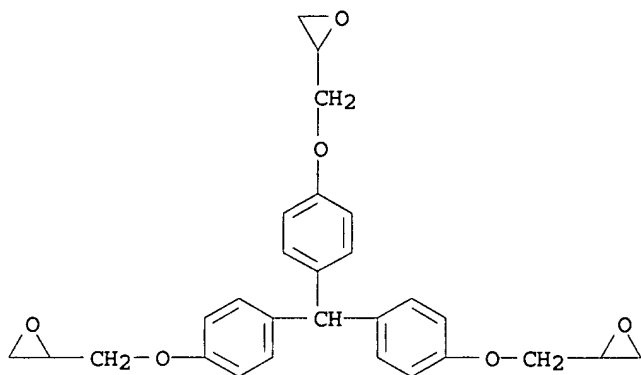
CMF C19 H17 N5 O2



CM 2

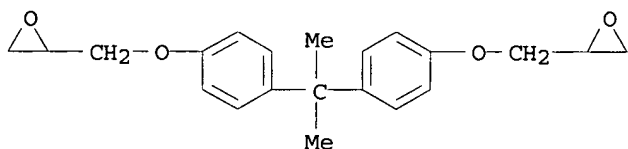
CRN 43224-82-4

CMF C28 H28 O6



CM 3

CRN 1675-54-3
CMF C21 H24 O4

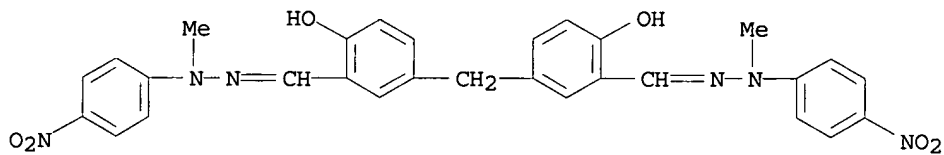


RN 170172-11-9 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl (4-nitrophenyl)hydrazone], polymer with (chloromethyl)oxirane and 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

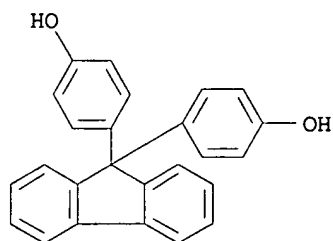
CM 1

CRN 154487-10-2
CMF C29 H26 N6 O6



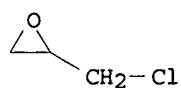
CM 2

CRN 3236-71-3
CMF C25 H18 O2



CM 3

CRN 106-89-8
CMF C3 H5 Cl O



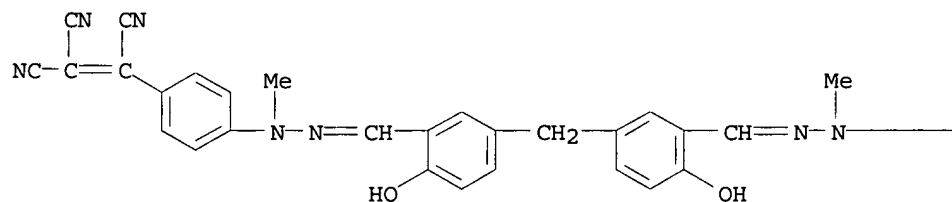
RN 170172-13-1 HCAPLUS

CN Ethenetricarbonitrile, [methylenebis[(6-hydroxy-3,1-phenylene)methylidene(1-methyl-1-hydrazinyl-2-ylidene)-4,1-phenylene]]bis-, polymer with (chloromethyl)oxirane and 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

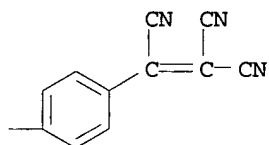
CM 1

CRN 170172-12-0
CMF C39 H26 N10 O2

PAGE 1-A

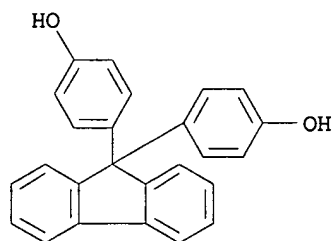


PAGE 1-B



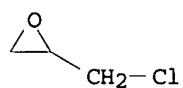
CM 2

CRN 3236-71-3
CMF C25 H18 O2



CM 3

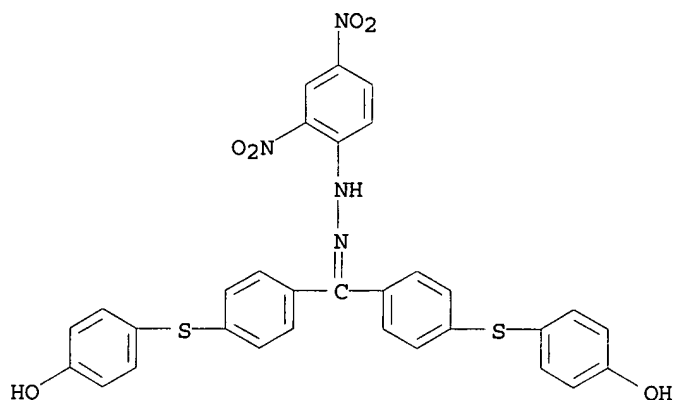
CRN 106-89-8
 CMF C3 H5 Cl O



RN 170172-14-2 HCAPLUS
 CN Methanone, bis[4-[(4-hydroxyphenyl)thio]phenyl]-,
 (2,4-dinitrophenyl)hydrazone, polymer with 2,2'-[(1-
 methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]and
 2,2',2''-[methylidynetris(4,1-phenyleneoxymethylene)]tris[oxirane]
 (9CI) (CA INDEX NAME)

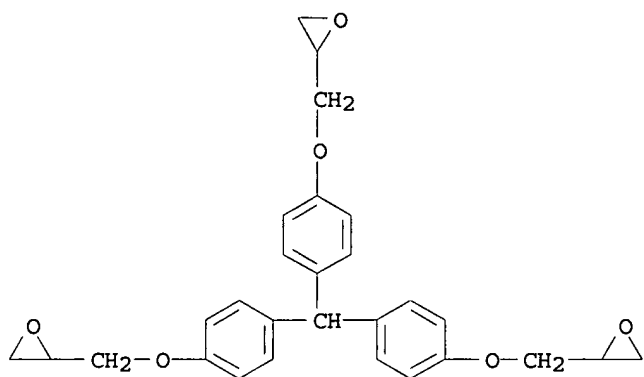
CM 1

CRN 154487-05-5
 CMF C31 H22 N4 O6 S2



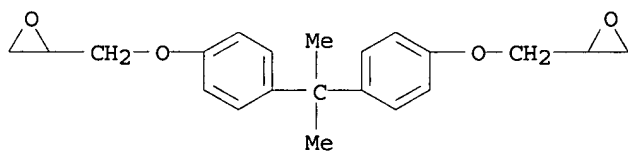
CM 2

CRN 43224-82-4
 CMF C28 H28 O6



CM 3

CRN 1675-54-3
 CMF C21 H24 O4

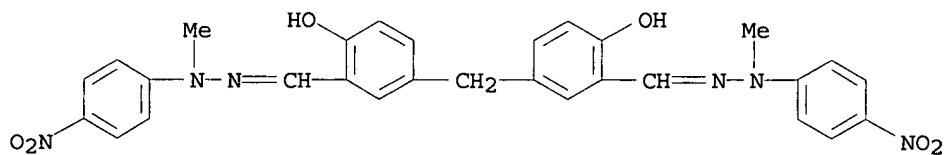


RN 170172-15-3 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl (4-nitrophenyl)hydrazone], polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

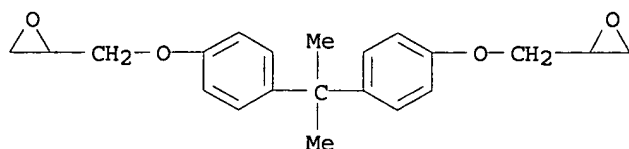
CM 1

CRN 154487-10-2
 CMF C29 H26 N6 O6



CM 2

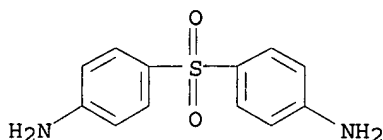
CRN 1675-54-3
 CMF C21 H24 O4



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S

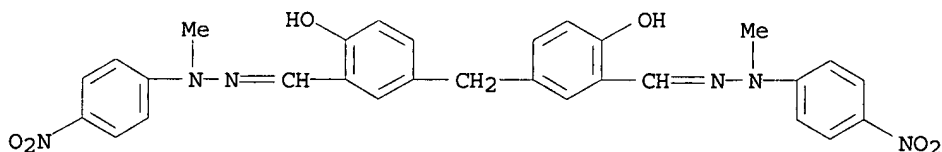


IT 154487-10-2

RL: RCT (Reactant); RACT (Reactant or reagent)
 (nonlinear optically active polymers containing hydrazone
 chromophores)

RN 154487-10-2 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl (4-
 nitrophenyl)hydrazone] (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

IT 154487-20-4P 154487-21-5P 154487-22-6P 154487-24-8P

154487-33-9P 154487-35-1P 162430-88-8P

170172-11-9P 170172-13-1P 170172-14-2P

170172-15-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)

(nonlinear optical; nonlinear optically active polymers containing
 hydrazone chromophores)

IT 2772-51-2 154487-05-5 154487-10-2 154487-17-9

162430-76-4 162430-77-5

RL: RCT (Reactant); RACT (Reactant or reagent)
 (nonlinear optically active polymers containing hydrazone
 chromophores)

L98 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:854254 HCAPLUS

DOCUMENT NUMBER: 124:119008

TITLE: Nonlinear optical epoxy resin compositions
 with improved optical susceptibilities and
 stability

INVENTOR(S): Newsham, Mark D.; Inbasekaran, Muthiah N.;
 Mang, Michael N.

PATENT ASSIGNEE(S): Dow Chemical Co., USA

SOURCE: U.S., 10 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
US 5445854	A	19950829	US 1993-159074	1993 1129

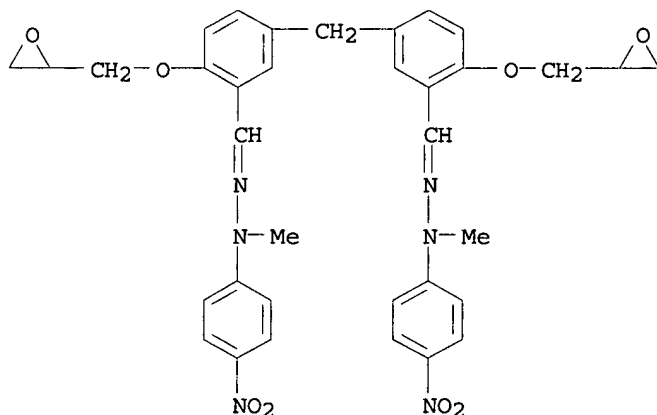
PRIORITY APPLN. INFO.: US 1993-159074
 1993
 1129

AB The oriented optical epoxy compns. comprise a reaction product of arylhydrazones with a monomer copolymerizable therewith and optionally a curing agent. An epoxy resin composition contained DER 332 5.543, bis(N'-methyl-4-nitrophenylhydrazone) of 5,5'-methylenebis-salicylaldehyde 4.489, and ethyltriphenylphosphoniumiodide 0.34 g in 25 mL Dowanol PM glycol ether.

IT 172729-76-9P
 RL: PNU (Preparation, unclassified); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
 (nonlinear optical epoxy resin compns. with improved optical susceptibilities and stability)

RN 172729-76-9 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-(oxiranylethoxy)-, bis[methyl(4-nitrophenyl)hydrazone] (9CI) (CA INDEX NAME)



IT 154487-29-3 154487-32-8 170172-15-3
 172729-77-0 172729-78-1 172729-79-2
 172778-34-6

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (nonlinear optical epoxy resin compns. with improved optical susceptibilities and stability)

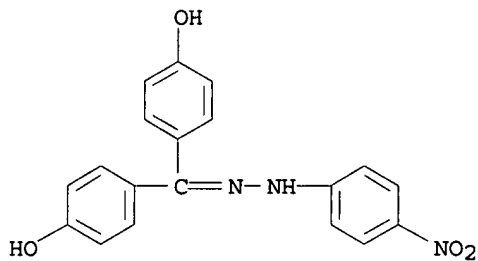
RN 154487-29-3 HCAPLUS

CN Methanone, bis(4-hydroxyphenyl)-, (4-nitrophenyl)hydrazone, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 2772-51-2

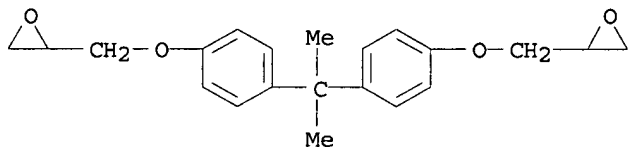
CMF C19 H15 N3 O4



CM 2

CRN 1675-54-3

CMF C21 H24 O4



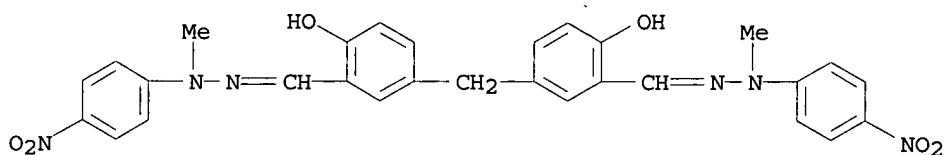
RN 154487-32-8 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl (4-nitrophenyl)hydrazone], polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI)
(CA INDEX NAME)

CM 1

CRN 154487-10-2

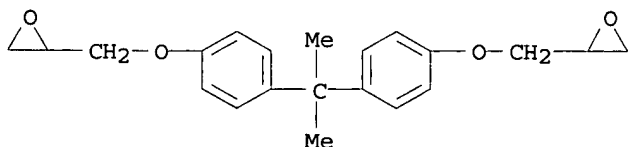
CMF C29 H26 N6 O6



CM 2

CRN 1675-54-3

CMF C21 H24 O4



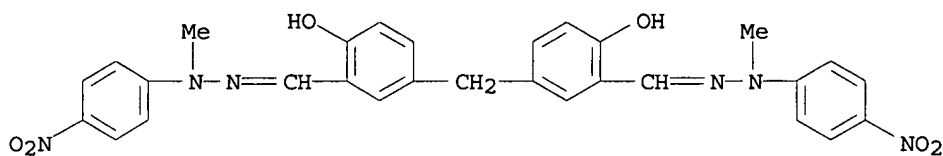
RN 170172-15-3 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl(4-nitrophenyl)hydrazone], polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 154487-10-2

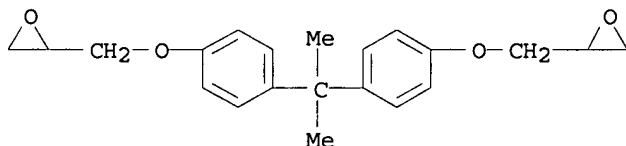
CMF C29 H26 N6 O6



CM 2

CRN 1675-54-3

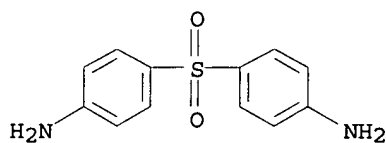
CMF C21 H24 O4



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



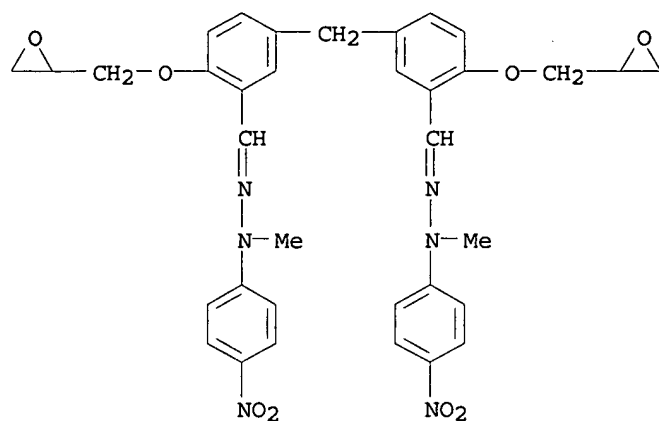
RN 172729-77-0 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-(oxiranylmethoxy)-, bis[methyl(4-nitrophenyl)hydrazone], polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

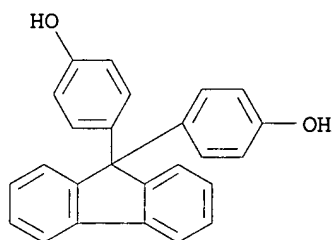
CRN 172729-76-9

CMF C35 H34 N6 O8



CM 2

CRN 3236-71-3
CMF C25 H18 O2

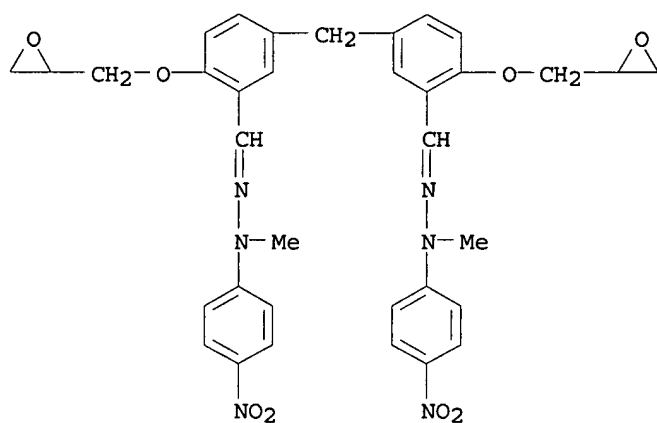


RN 172729-78-1 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-(oxiranylmethoxy)-, bis[methyl (4-nitrophenyl)hydrazone], polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane](9CI)
(CA INDEX NAME)

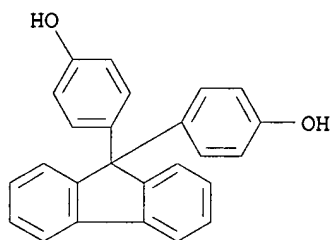
CM 1

CRN 172729-76-9
CMF C35 H34 N6 O8



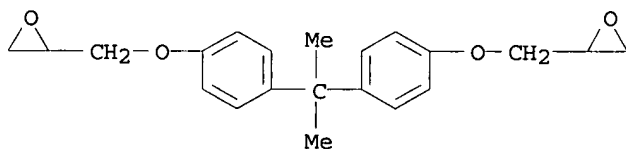
CM 2

CRN 3236-71-3
CMF C25 H18 O2



CM 3

CRN 1675-54-3
CMF C21 H24 O4

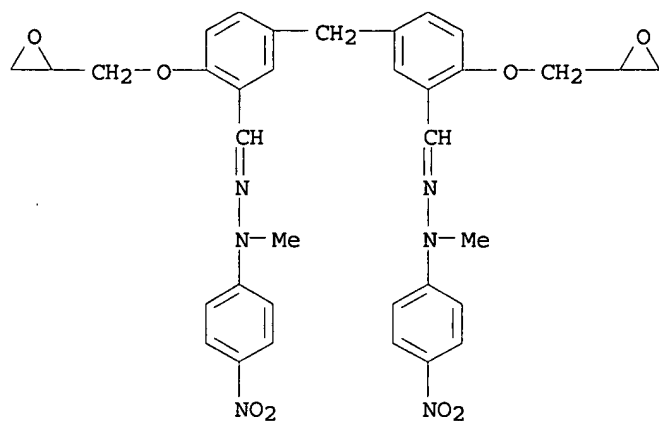


RN 172729-79-2 HCAPLUS

CM Benzaldehyde, 3,3'-methylenebis[6-(oxiranylmethoxy)-, bis[methyl(4-nitrophenyl)hydrazone], polymer with 2,2',2''-[methylidynetris(4,1-phenyleneoxymethylene)]tris[oxirane] and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

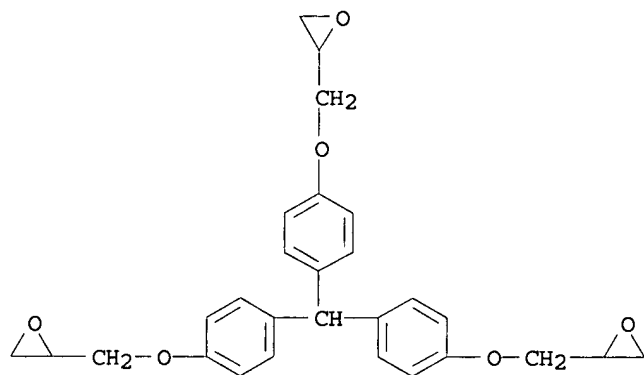
CRN 172729-76-9
CMF C35 H34 N6 O8



CM 2

CRN 43224-82-4

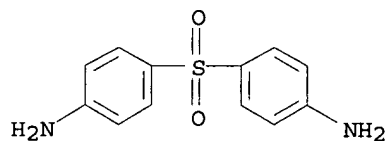
CMF C28 H28 O6



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S

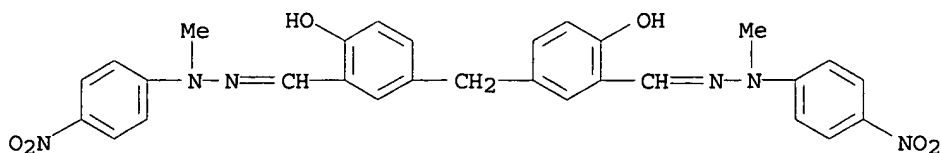


RN 172778-34-6 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl (4-nitrophenyl)hydrazone], polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]and 3a,4,7,7a-tetrahydromethyl-1,3-isobenzofurandione(9CI) (CA INDEX NAME)

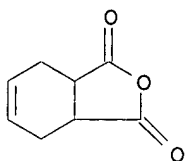
CM 1

CRN 154487-10-2
CMF C29 H26 N6 O6



CM 2

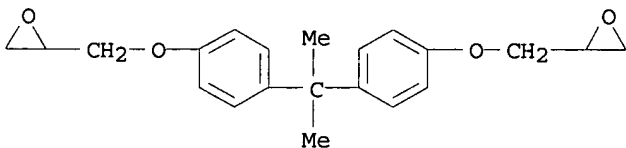
CRN 26590-20-5
CMF C9 H10 O3
CCI IDS



D1-Me

CM 3

CRN 1675-54-3
CMF C21 H24 O4

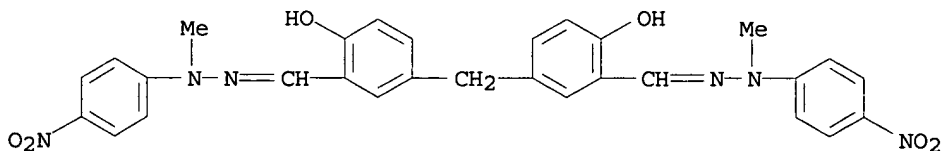


IT 154487-10-2

RL: RCT (Reactant); RACT (Reactant or reagent)
(nonlinear optical epoxy resin compns. with improved optical
susceptibilities and stability)

RN 154487-10-2 HCAPLUS

CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl (4-
nitrophenyl)hydrazone] (9CI) (CA INDEX NAME)



IC C08G059-00

INCL 428001000
 CC 37-6 (Plastics Manufacture and Processing)
 IT 172729-76-9P
 RL: PNU (Preparation, unclassified); POF (Polymer in formulation);
 PRP (Properties); PREP (Preparation); USES (Uses)
 (nonlinear optical epoxy resin compns. with improved optical
 susceptibilities and stability)
 IT 154487-29-3 154487-32-8 170172-15-3
 172729-77-0 172729-78-1 172729-79-2
 172778-34-6
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (nonlinear optical epoxy resin compns. with improved optical
 susceptibilities and stability)
 IT 106-89-8, reactions 154487-10-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (nonlinear optical epoxy resin compns. with improved optical
 susceptibilities and stability)

L98 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:257039 HCAPLUS
 DOCUMENT NUMBER: 120:257039
 TITLE: Nonlinear optical arylhydrazones and nonlinear
 optical polymers thereof
 INVENTOR(S): Bales, Stephen E.; Brennan, David J.; Gulotty,
 Robert J.; Haag, Anthony P.; Inbasekaran,
 Muthiah N.
 PATENT ASSIGNEE(S): Dow Chemical Co., USA
 SOURCE: U.S., 15 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5208299	A	19930504	US 1992-866400	1992 0410
WO 9321282	A1	19931028	WO 1993-US2191	1993 0310
W: BR, CA, JP, KR RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 635048	A1	19950125	EP 1993-907401	1993 0310
R: BE, DE, FR, GB, SE				
JP 07505909	T2	19950629	JP 1993-518317	1993 0310
JP 3210341	B2	20010917		
IL 105331	A1	19960119	IL 1993-105331	1993 0407
PRIORITY APPLN. INFO.:			US 1992-866400	A
			WO 1993-US2191	W
				1993 0310

OTHER SOURCE(S): MARPAT 120:257039

AB Nonlinear optical materials are described which comprise Ar(R)N-N:CA2 (I: Ar = an aromatic hydrocarbyl or heterocyclic radical with ≥ 1 electron-withdrawing substituent group and containing ≤ 30 non-H atoms; A = independently at each occurrence R or a C6-30 aromatic group optionally having ≥ 1 hydroxy group; and R = H or a C1-20 hydrocarbyl radical, with the restriction that the mol. includes ≥ 2 aromatic substituted hydroxy groups). Nonlinear optical materials are further described which incorporate ≥ 1 divalent moiety derived from I or a polymer comprising recurrent divalent moieties derived from I.

IT 154487-19-1P 154487-29-3P 154487-30-6P
154487-31-7P 154487-32-8P

RL: TEM (Technical or engineered material use); FORM (Formation, nonpreparative); PREP (Preparation); USES (Uses)
(preparation and use of, as nonlinear optical material)

RN 154487-19-1 HCAPLUS

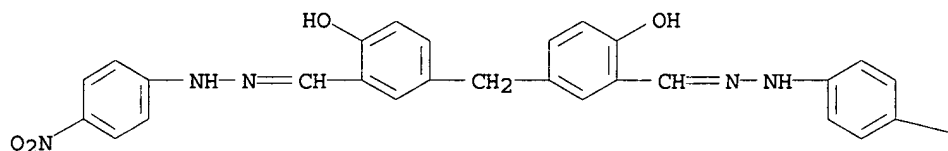
CN Carbonic dichloride, polymer with 3,3'-methylenebis[6-hydroxybenzaldehyde] bis(4-nitrophenyl)hydrazone and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 154487-09-9

CMF C27 H22 N6 O6

PAGE 1-A



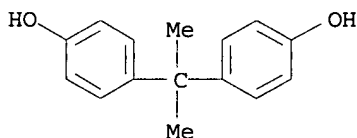
PAGE 1-B

—NO₂

CM 2

CRN 80-05-7

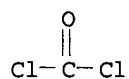
CMF C15 H16 O2



CM 3

CRN 75-44-5

CMF C C12 O



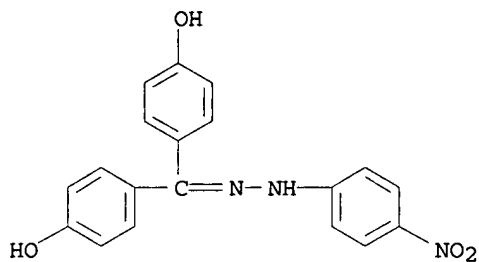
RN 154487-29-3 HCAPLUS

CN Methanone, bis(4-hydroxyphenyl)-, (4-nitrophenyl)hydrazone, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 2772-51-2

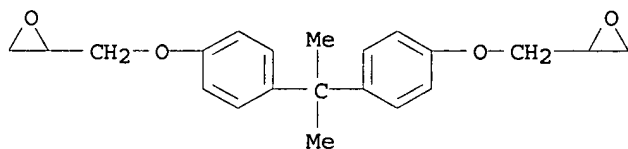
CMF C19 H15 N3 O4



CM 2

CRN 1675-54-3

CMF C21 H24 O4



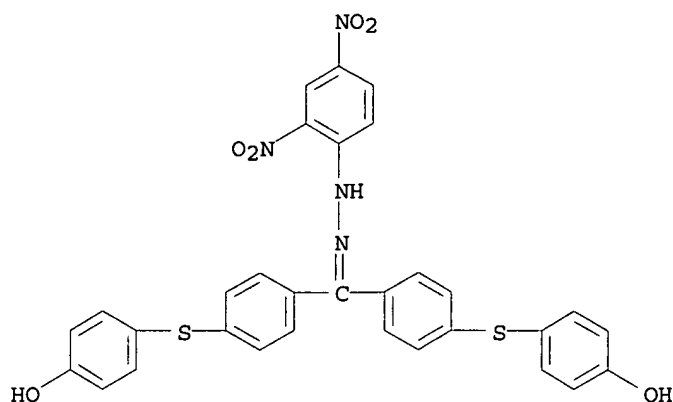
RN 154487-30-6 HCAPLUS

CN Methanone, bis[4-[(4-hydroxyphenyl)thio]phenyl]-, (2,4-dinitrophenyl)hydrazone, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

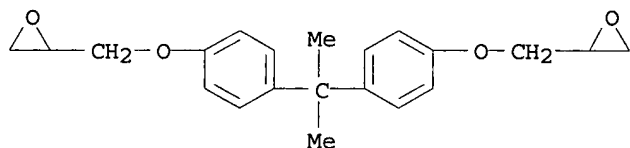
CRN 154487-05-5

CMF C31 H22 N4 O6 S2



CM 2

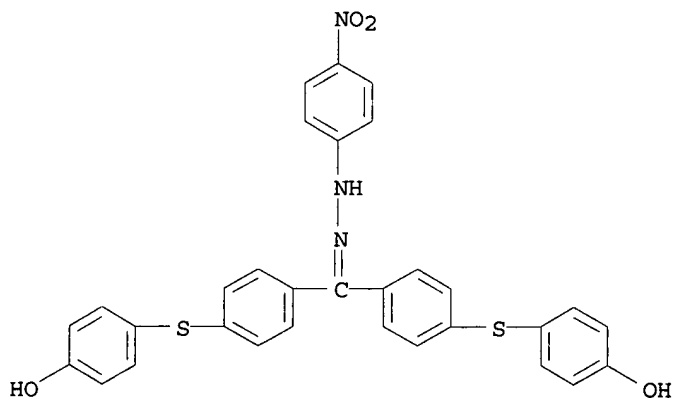
CRN 1675-54-3
CMF C21 H24 O4



RN 154487-31-7 HCAPLUS
CN Methanone, bis[4-[(4-hydroxyphenyl)thio]phenyl]-,
(4-nitrophenyl)hydrazone, polymer with 2,2'-[(1-
methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane](9CI)
(CA INDEX NAME)

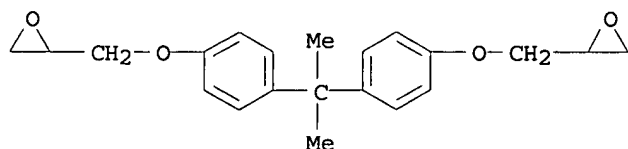
CM 1

CRN 154487-08-8
CMF C31 H23 N3 O4 S2



CM 2

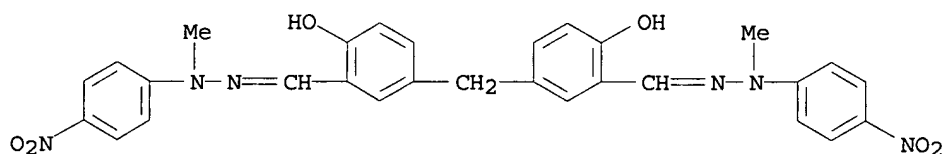
CRN 1675-54-3
CMF C21 H24 O4



RN 154487-32-8 HCAPLUS
CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl(4-nitrophenyl)hydrazone], polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane](9CI)
(CA INDEX NAME)

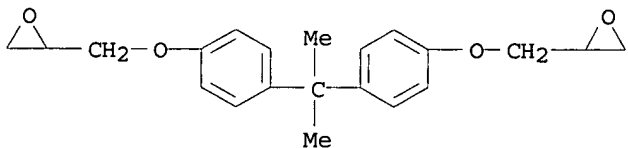
CM 1

CRN 154487-10-2
CMF C29 H26 N6 O6



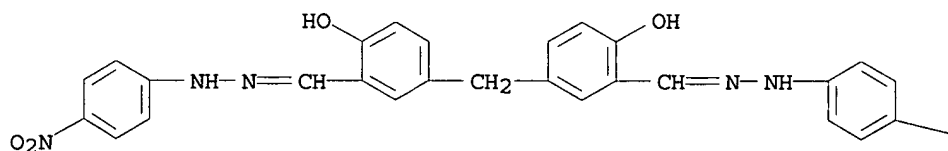
CM 2

CRN 1675-54-3
CMF C21 H24 O4



IT 154487-09-9P 154487-10-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and use of, as nonlinear optical materials and in the
preparation of polymers with nonlinear optical properties)
RN 154487-09-9 HCAPLUS
CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[(4-nitrophenyl)hydrazone] (9CI) (CA INDEX NAME)

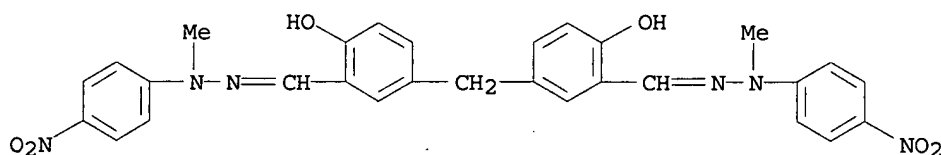
PAGE 1-A



PAGE 1-B

—NO₂

RN 154487-10-2 HCAPLUS
 CN Benzaldehyde, 3,3'-methylenebis[6-hydroxy-, bis[methyl(4-nitrophenyl)hydrazone] (9CI) (CA INDEX NAME)



IC ICM C08F020-00
 ICS C08G008-02; C08G063-00
 INCL 525437000
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 IT 154487-18-0P **154487-19-1P** 154487-20-4P 154487-21-5P
 154487-22-6P 154487-23-7P 154487-24-8P 154487-25-9P
 154487-26-0P 154487-27-1P 154487-28-2P **154487-29-3P**
154487-30-6P 154487-31-7P 154487-32-8P
 154487-33-9P 154487-34-0P 154487-35-1P
 RL: TEM (Technical or engineered material use); FORM (Formation, nonpreparative); PREP (Preparation); USES (Uses)
 (preparation and use of, as nonlinear optical material)
 IT 2675-35-6P 2772-51-2P 3155-26-8P 154487-05-5P 154487-06-6P
 154487-07-7P 154487-08-8P **154487-09-9P**
154487-10-2P 154487-11-3P 154487-12-4P 154487-13-5P
 154487-14-6P 154487-15-7P 154487-16-8P 154487-17-9P
 154487-36-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and use of, as nonlinear optical materials and in the preparation of polymers with nonlinear optical properties)

=>